What Amateur Radio Operators Do?

Ham radio operators use two-way radio stations from their homes, cars, boats and outdoors to make hundreds of friends around town and around the world. They communicate with each other using voice, computers and Morse code. Some hams bounce their signals off the upper regions of the atmosphere, so they can talk with hams on the other side of the world. Other hams use satellites. Many use hand-held radios that fit in their pockets. Using even the simplest of radio setups and antennas, amateurs communicate with each other for fun, during emergencies and even in contests. They handle messages for police, NWS and other public service organizations during all kinds of emergencies including: floods, fires, earthquakes, tornadoes, car accidents, chemical spills, and search and rescues. For more information, visit *www.arrl.org* - the American Radio Relay League. ®

Weather Spotter Checklist

- **FUNNEL CLOUD or TORNADO**....Watch for cloud rotation and damage
- **HAIL**....Pea-sized or larger
- **HEAVY RAIN**....1/2 inch in 1 hr; 1.5+ inches in 24 hrs
- **HEAVY SNOW**...4 inches in 12 hrs; 6+ inches in 24 hrs
- **FLOODING**...Of any kind. Is the water level rising or falling?
- **POOR VISIBILITY**....1/2 mile or less in blowing dust, rain or snow.
- **TRAVEL PROBLEMS**...Any conditions where poor or hazardous travel conditions observed or reported.
- **STRONG OR DAMAGING WINDS**...Any winds estimated to be over 40 mph. Or winds that produce any damage. Estimate using Beaufort chart.
- **ANY DAMAGE, INJURY OR LOSS OF LIFE DUE TO WEATHER**...Be sure to include location, time and specific cause.

If you observe any of these conditions,
please call the NWS in Spokane and make a report at
(509) 244-0435

WEATHER WATCHED

WEATHER WATCHER

National Weather Service
2601 North Rambo Road
Spokane, WA 99224-9164

WEATHER WATCHER
National Weather Service Quarterly Report

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Editor's Notes

I hope you enjoy the winter edition of the *Weather Watcher*. In order to get fresh ideas for our newsletter, we encourage our users to ask us questions. I'm happy to say the "Spotter Corner" article was just one of those questions. Feel free to contact us anytime. This issue highlights the long range winter forecast and La Niña. We also inform you about Y2K and the NWS along with winter weather preparedness.

The main purpose of this publication is to keep weather spotters and our users informed about our services and programs, and to recognize those who help us accomplish our mission. We will continue to see many exciting changes in weather observing and forecasting in the near future. Weather spotters and observers, in addition to our friends in the media and emergency management, will continue to be an extremely valuable part of our mission.

If there is something you would like to see in the next newsletter or have comments about a previous issue, please let us know.

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La Niña, again?

Indications are that the current La Niña pattern will continue into the winter and possibly early spring. On the average, La Niña winters are wetter and cooler than normal for the Inland Northwest. More specifically, the first part of the winter (Nov-Jan) tends to be wetter but warmer than normal, while the latter half of the winter (Jan-Mar) is cooler than normal. As many of you might remember, La Niña was in place last winter. While the 98-99 winter was wetter than normal, temperatures remained above normal for each month of the winter. This resulted in more rain than snow for the lowlands, with the mountains picking up record snowfall.

So, the obvious question is: since La Niña will be around again this winter, should we expect similar weather to last winter? In some respects, the answer could be "yes". The above-normal precipitation has a high likelihood of occurrence. As for temperatures and snow vs. rain, the answer is less certain. The Climate Prediction Center (CPC) notes that the trend of the past decade in the Pacific Northwest has been for temperatures to be above average. Last year's above normal temperatures, despite the La Niña conditions, are consistent with this recent warming trend. Thus, the official CPC forecast is for the recent warm trend to offset the typical cold La Niña temperatures once again, resulting in near-normal temperatures this winter.

However, there is a particularly intriguing statement in CPC's discussion: *The fact that this will be the second La Niña winter in a row may cause the impacts to appear with greater certainty as residual effects of the 1997-98 El Niño have completely dissipated.* In other words, last year's La Niña may have been somewhat "abnormal" due to the previous strong El Niño. This leads us to take a look at past winters where La Niña had persisted from the previous winters. Since 1950, this has occurred 4 times: 1955-56, 1971-72, 1974-75, and 1984-85.

When comparing the consecutive La Niña winters for our three main climatological sites, it is seen that in all but one case (Wenatchee 1984-85), the second La Niña winter was snowier than the first. In fact, the 1955-56 winter ranks as the snowiest winter in Wenatchee, the second snowiest in Lewiston, and fourth snowiest in Spokane. As an interesting side note, in general the second La Niña winter is slightly colder than the first. While it's impossible to say that the upcoming winter will give above normal snowfall to our area, these findings do appear to support the statement by CPC.

So residents in the Inland Northwest can expect another wet winter, especially through December. And while snowfall is a less certain forecast, it does appear likely the upcoming winter will at least be snowier than last winter. ®

All articles are written by the Spokane NWS staff. A special thanks to Robin Fox and Ron Miller for their contributions.

Are you Prepared for Winter Weather?

Winter weather too often catches people unprepared. Researchers say that 70 % of the fatalities related to ice and snow occur in automobiles, and about 25 % of all winter related fatalities are people that are caught off guard, out in the storm. What have you done to prepare for winter weather and to ensure your safety? For starters, prepare a winter survival kit for your car, containing....

- Blankets and extra warm clothing, like boots, mittens and a hat
- Water and high energy snacks, like candy bars or trail mix
- First aid kit
- Battery-powered radio, NOAA Weather Radio, flashlight and extra batteries
- Bright colored cloth for antenna identification
- Tire chains and shovel
- if possible, cell phone or CB radio

Also remember to have your vehicle winterized, including good traction tires, and keep an adequate amount of gasoline in its tank. ®

Spotter corner

The role of a weather spotter is to inform the NWS on presence of severe or significant weather. During and after every major storm, the NWS receives numerous spotter calls ranging from snow totals to wind reports. The NWS may also call you to solicit information. But do you ever wonder what the NWS does with this information?

Spotter reports are a valuable resource during times of changing weather. The NWS also receives and uses data on a daily basis from cooperative observers, ham radio operators and ski resorts. Though the NWS has access to reports from automated equipment across eastern Washington and north Idaho, receiving a human report is deemed more important. These valuable reports are used in a variety of ways, including:

- as ground truth for watches, warnings and advisories
- to confirm what the radar, satellite and automated rain gauges are reporting
- to support updates to forecasts and statements
- in forecaster training to improve warning skills. ®

Fall Weather Statistics

Wenatchee Airport	Sep	Oct	Nov	Total
Avg High Temp	76.6	60.3	47.6	61.5
Depart from Normal	+0.8	-1.1	+3.6	+1.1
Avg Low Temp	48.5	37.7	36.1	40.8
Depart from Normal	-2.6	-2.5	+5.3	0.0
Total Precip	Trace	0.52	0.80	1.41
Depart from Normal	-0.40	+0.07	-0.27	-0.60

Lewiston Airport	Sep	Oct	Nov	Total
Avg High Temp	79.1	63.2	53.6	65.3
Depart from Normal	+1.8	-0.1	+5.5	+2.4
Avg Low Temp	49.0	40.9	38.7	42.9
Depart from Normal	-1.5	-0.2	+4.6	+1.0
Total Precip	Trace	1.23	1.62	2.85
Depart from Normal	-0.78	+0.33	+0.47	+0.02

Spokane Airport	Sep	Oct	Nov	Total
Avg High Temp	74.4	59.2	48.2	60.6
Depart from Normal	+2.3	+0.7	+6.9	+3.3
Avg Low Temp	43.8	35.5	34.6	38.0
Depart from Normal	-2.1	-0.6	+5.9	+1.1
Total Precip	Trace	0.89	2.04	2.93
Depart from Normal	-0.73	-0.10	-0.11	-0.94
Total Snow	0	0	2.1	2.1
Depart from Normal	0	-0.3	-4.3	-4.6

Y2K & NWS

What can you expect when the clocks strike midnight, January 1, 2000? Who knows? As for the National Weather Service, it appears the only difficult forecast will be to determine if it will snow and how cold it will be. That is because the NWS has a great deal of confidence there will be no interruption of our services to the public or other customers. The systems which collect weather data, generate and disseminate weather forecasts, watches and warnings have all been tested and are Y2K ready. Since 1996, the NWS has been working to ensure all systems and computers are ready for the new millennium. This also includes backup systems including emergency generators, cell phones and ham radio equipment. The final phase of testing was completed at the end of March 1999.

All NWS offices, including Spokane, will be fully staffed on the evening of December 31, 1999. In addition, NWS Headquarters will be running a Y2K Situation Desk at their 24-hour Operations Center which will be in contact with all offices and three Y2K international desks in Australia, England and Russia. ®

Autumn in Review

After a relatively mild summer, warm, dry weather continued into September. In fact, all three climate sites received only a trace of rainfall (i.e. less than 0.01") during the month. September delivered abundant sunshine to Inland Northwest residents. Spokane recorded 14 cloudless days during the month. The sunshine resulted in warmer days than normal, but the clear skies and dry air allowed overnight temperatures to dip about 2 degrees below normal.

The dry spell continued into the first week of October. A storm system on the 8th finally gave measurable rain to Lewiston and Spokane, with Wenatchee's dry spell ending on the 11th. By the end of the month, Lewiston and Wenatchee had actually received more than normal rainfall for October. Temperatures continued to be very seasonal through the month. The main exception to this was during the middle of the month when a cold front ushered in rather chilly air for that time of the year. Spokane recorded a low temperature of 18 degrees on the morning of the 16th, breaking the old record of 22 degrees set in 1946. Wenatchee dropped to 27 degrees, breaking the old 30 degree record set in 1989.

November turned out to be extremely warm. Low and high temperatures were 3 to 7 degrees above normal for the month. Less than 7 days of the month had below normal temperatures. A record setting warm spell occurred in the middle of the month. Temperatures soared into the 70s in Lewiston, setting records for 3 days straight. The 77 degrees on the 12th was the warmest November day ever in Lewiston. Spokane's average temperature of 60 on the 12th was a full 24 degrees above normal. After this warm spell, Pacific storm systems began to make regular visits to the area. Temperatures continued to be above normal causing most of the precipitation to fall in the form of rain. ®

Ham Radio Event

The National Weather Service hosted an amateur radio special event. The event began the evening of Friday, November 26th and continued until the evening of Saturday, November 27th. Amateur radio operators worked from 51 National Weather Service offices across the country. This event allowed the NWS to recognize the contributions that amateur radio operators have made during times of threatening weather. It also allowed the National Weather Service to test their back-up communications, with Y2K in mind.

The Spokane National Weather Service office took part in this event with the local chapter of amateur radio operators, headed by Mary Moore of Spokane. This group of private individuals, licensed as amateur (ham) radio operators, regularly serve as weather spotters and communicators for the Spokane National Weather Service office. The ham operators set up their systems in the office's conference room and worked 4 hour shifts during the 24 hour test period. A few operated from their homes. The ham operators attempted to contact as many other ham operators and weather offices as they could. They kept a record of the names of the operators they contacted, their location, and a one-word description of the weather at their site. In all, they made approximately 260 contacts, ranging from as far away as Oahu, HI and the Virgin Islands to Alaska and South America. This provided a great opportunity for the NWS office staff to meet and talk with the hams operators, and likewise for the hams operators to become familiar with the NWS operations. ®

TRIVIA: When was the snowiest winter season and snowiest day in Spokane?

Trivia answer: The winter was 1949-50 with 93.5 inches. The day was Jan 21, 1954 with 12.7 inches.